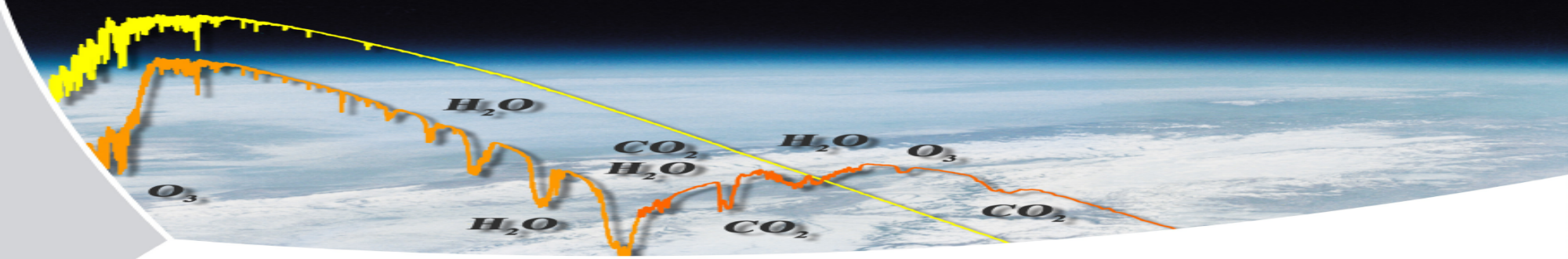


# Status Operational Processor V9

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24.11.2015

# Overview

# Corrupt L0 Files (I)

- The following anomalies were found
  - Improper handling of state ID 67 before July 20th 2003
  - Perforated or truncated states
  - Missing scanner position at end of states
  - Orbits before 2-08-2001
  - Wrong state ID
  - Duplicated states

# Corrupt L0 Files (II)

- A new version 8.02 was generated with the following changes:
  - Handle state 67 as version 7.04
  - Drop incomplete states
  - Extrapolate last scanner position if missing
- Alter validity date of first m-factor file ot include data before 2.08.2015
- FAT was successfully performed on 18.11.2015
  - 20 orbits (5 per anomaly for implementation/regression test)
  - 5 orbits for OSAT

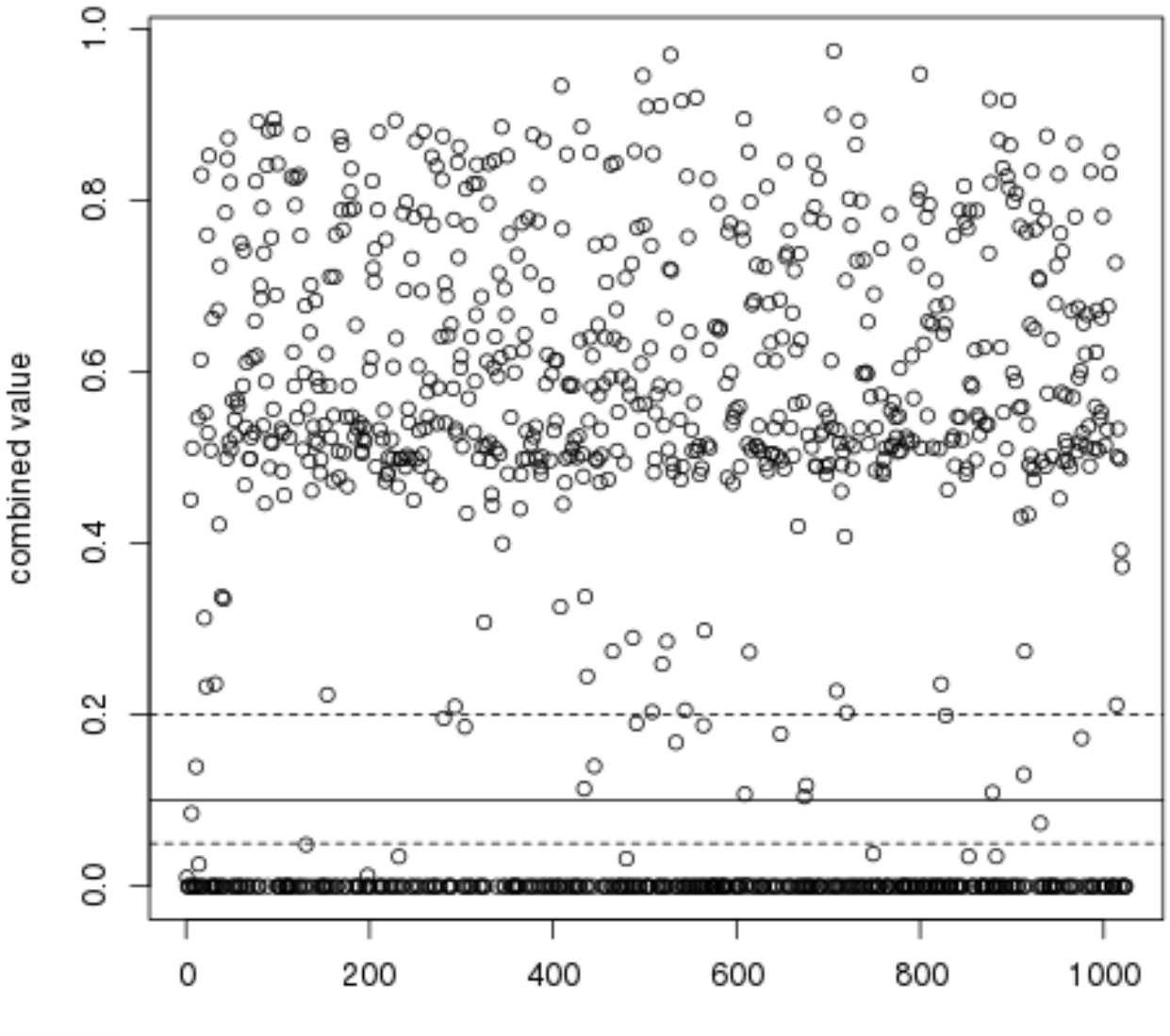
# WP2160: Individual Pixel Characterisation (I)

- Mask was delivered by SRON
- Mask contains for channel 8 a float to characterise quality of pixels (0-1)
- Algorithm uses this mask was implemented in the following way:
  - The original file of SRON is directly used (i.e. no DB in processor)
  - An additional config parameter was added to L0-1 processor to switch on and off the SRON mask
  - The threshold to mark a pixel as bad can be changed in the configuration
  - The threshold for marking a pixel as bad is currently set to 0.1 (this works well with SRON CO retrieval but would have to be tested for SGP retrieval)

# WP2160: Individual Pixel Characterisation (II)

- Verification Test Targets:
  - New flags for channel 8 are evaluated correctly
  - Flags for channel 1-7 remain unchanged
  - Thresholds different than 0.1 are processed correctly (0.2 and 0.05 were tested)
- The data from the SRON DB were extracted with hdf5 tools and compared to processor results
- All tests were successful

# WP2160: Individual Pixel Characterisation (III)



# WP2220: Dark Calibration (I)

- Data base reading and application implemented
- Test Targets
  - Channel 8 Dark signal/error for (Earth) are correctly calculated
  - Channel 8 Dark signal/error for (Sun) are correctly calculated
  - Dark signal/error for other channels remains unchanged
- Verification:
  - Calculate the darks “manually” from the SRON DB values
  - Compare to processor values
  - Check that all other dark values are unchanged by switching SRON darks on and off and compare
- Mximum relative difference found 1.134e-10 (signal), 2.637e-06 (error), i.e. are below the threshold
- All other channels showed identical values for SRON darks on/off

# WP2220: Dark Calibration (II)

- *Needed: Update of SRONDB*
- Planned other test: Apply dark to dark measurements

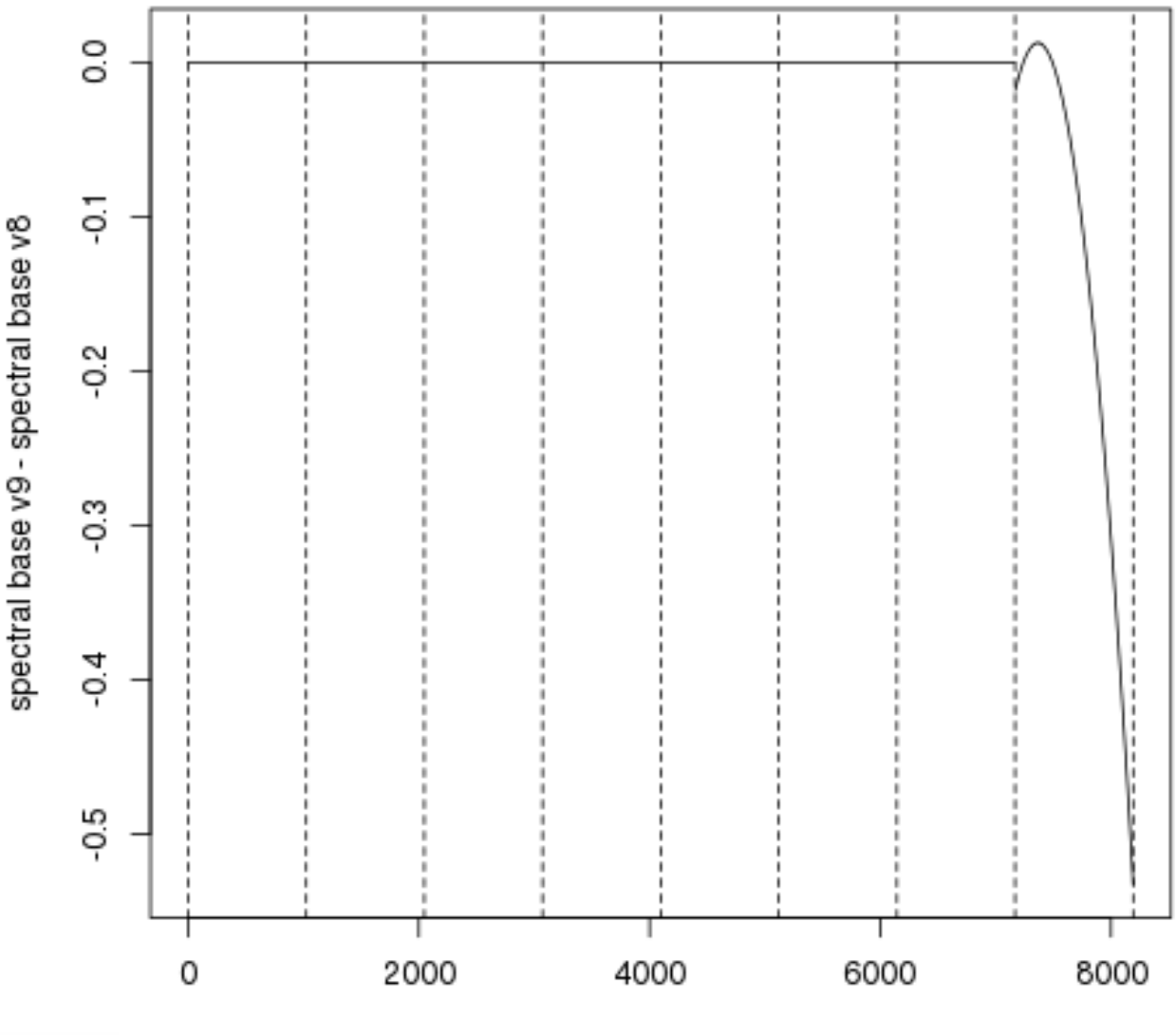
# WP 2240 Spectral Calibration Channel 6+

- No changes
- implementation before MTR unlikely

# WP 2250: Spectral Calibration Channel 8 (II)

- Implementation complete:
  - Original key data base wavelength was exchanged with one calculated from SRON
  - No algorithm changes needed
- Test Targets:
  - Wavelength of channel 8 are set correctly
  - Wavelength of other channels are unchanged
- Verification done by manual implementation of wavelength polynom calculation and comparison with processor result
- Maximum relative difference found 3.315e-08 (reason: single precision of saved baseline wavelngth)

# WP 2250: Spectral Calibration Channel 8 (II)



# WP2270: Improve Pointing

- TN from IUP received
- Mis-pointing angles need to be adjusted
- Will be started after polarisation (CHEOPS) is finished
- Expected to be implemented before MTR
- Testing of effect needs to be defined

# WP2120: Improve ESM Diffuser Reference

- Will be done together with WP2140
- No inputs yet, expected end 2015/begin 2016

# WP2140: Improve Degradation Correction

- Implementation of changes (if any) not started yet
- Waiting for ESM diffuser changes
- Planned to be started January 2016
- Planned to be finished before February

# WP2150: Improve Polarisation Key Data

- Waiting for key data

# WP2260: Improve Polarisation Correction

- Implementation of GOME-CHEOPS algorithm on-going
- Planned to be finished this year
- Details of other improvements still under discussion
- If at all, can only be partially implemented before MTR
- First effort estimates done

# Schedule (I)

- Current scheduling sets the earliest data of MTR at February 3rd
- Not included implementations:
  - Polarisation except CHEOPS, maybe PMD delays
  - spectral calibration 6p
- Schedule shown in the next slide is preliminary for polarisation:
  - Not all dependencies in properly
  - Consequences of sequence (MEC) of processing not fully analysed yet
  - Some subtasks still need effort estimates
  - Assumes polarisation details are specified in time for earliest start of polarisation tasks

# Schedule (II)

**Project QWG Overview (from 2015-11-16-10:00-+0100)**

**Overview**

| Name | Start | End |
|---|---|---|
| QWG MTR | 2016-02-03 | 2016-02-03 |
| Final Presentation | 2016-10-28 | 2016-10-28 |
| **QWG General Activities** | **2014-11-02** | **2017-02-03** |
| **WP 4700: New product format** | **2014-11-07** | **2016-12-15** |
| **Level 1 Activities** | **2014-08-01** | **2017-02-01** |
| **WP 2110: L1-2 Feedback** | **2015-09-01** | **2016-06-30** |
| **L1 Implementation** | **2014-08-01** | **2016-08-05** |
| WP2140: Improve degradation correction (impl) | 2016-01-11 | 2016-02-01 |
| WP 2160: Pixel DBPM | 2015-08-31 | 2015-12-03 |
| WP 2220: Improve darks (impl) | 2015-10-15 | 2015-11-26 |
| WP 2240: Improve spectral calibration Ch.6+ | 2016-01-20 | 2016-08-05 |
| WP 2250: Improve spectral calibration Ch.8 | 2015-10-12 | 2015-12-02 |
| **WP 2260: Improve Polarisation** | **2015-11-17** | **2016-03-24** |
| WP2260: CHEOPS Implement | 2015-11-17 | 2015-12-11 |
| WP 2260: PMD Delays | 2016-02-03 | 2016-02-04 |
| WP 2260: PMD Spike Filtering | 2016-03-23 | 2016-03-23 |
| WP2260: Effective Wavelength Handling | 2016-02-25 | 2016-03-03 |
| WP 2260: Rotate Frame to U=0 (N) | 2016-03-23 | 2016-03-24 |
| WP 2260: Use LUT for polarisation (N) | 2016-02-04 | 2016-02-10 |
| WP2260: Verification (N) | 2016-03-04 | 2016-03-09 |
| WP2260: Limb Polarisation Improvement Incomplete | 2016-02-10 | 2016-02-25 |
| WP2260: Verification (L) | 2016-03-09 | 2016-03-23 |
| WP 2270: Improve Pointing (impl.) | 2016-01-05 | 2016-02-03 |
| WP 2210: Improve and consolidate errors | 2016-05-02 | 2017-01-25 |
| WP 2280: Support of L1 Working Group | 2017-01-03 | 2017-02-01 |
| **L2 Activities** | **2015-05-11** | **2017-06-21** |
| **Baseline Activities** | **2015-04-18** | **2016-10-28** |